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ORD Extramural Program Guide FY 1981

JRB Associates, Inc.
McLean, VA

Prepared for

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16. ABSTRACT

The Program Guide provides the public with information on the Office of Research and Development's current extramural research program and serves as a guide to Office of Research and Development's key personnel. This publication is updated each fiscal year.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Guides (organization), organization charts, grants, Financial management, Research management	Research Programs Grants	

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NOTICE

At the time this publication went to press, Congress had not yet passed our Fiscal Year 1981 appropriations. EPA was operating under a continuing resolution which allowed it to continue ongoing efforts but not begin any new activities. Bills pending before Congress at that time could reduce by as much as four percent our overall budget and could cause a redirection of an additional three percent. This document does, however, accurately reflect the figures in the President's Budget request.

TO OBTAIN COPIES

Copies of this Program Guide are available from:

ORD Publications
USEPA/CERI
Cincinnati OH 45268

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ORD
Extramural Program Guide
FY 1981

October 1, 1980 — September 30, 1981

Office of Research Program Management
Office of Research and Development
U.S. Environmental Protection Agency
Washington, DC 20460

TABLE OF CONTENTS

Pag

Introduction

ORD Office/Laboratory Abbreviations

Decision Unit Description

- Air
- Drinking Water
- Energy
- Interdisciplinary
- Pesticides
- Radiation
- Solid and Hazardous Waste
- Toxic Substances
- Water Quality

ORD's Extramural Program

Organizational Directory

- EPA Organizational Chart
- ORD Organizational Chart
- ORD Organization
- EPA Regional Contacts

Air

Drinking Water

Energy

Interdisciplinary

Pesticides

Radiation

Solid and Hazardous Waste

Toxic Substances

Water Quality

ORD's Extramural Program

Organizational Directory

Introduction

ORD Extramural Program Guide— FY 81

The purpose of the Program Guide is to acquaint the research and development community with the organizational structure of the Office of Research and Development—and to make public ORD's extramural research program for FY 81.

EPA's Office of Research and Development

The U.S. Environmental Protection Agency (EPA) was established in December of 1970 to protect and enhance the nation's environment. The Agency was created by a Presidential Reorganization Order that combined 15 previously existing units of the federal government. This single organizational unit was established to better control environmental pollution, drinking water quality, environmental radiation and noise, solid waste, pesticides, and other toxic substances.

The Office of Research and Development (ORD) is the principal scientific component of EPA. Its fundamental role is to produce the scientific data and technical tools needed to develop a national policy for the effective control of pollution and to promulgate adequate and viable environmental standards. ORD's research is supplemented by general scientific and technical research in other federal agencies, the academic community, and elsewhere. ORD also supports the Agency's involvement in many international organizations that share environmental research and development concerns.

More specific functions of ORD include: (1) maintaining in-house expertise capable of quickly responding to emergencies and giving expert advice and testimony when necessary; (2) sharing the results of environmental research and development with a wide range of individuals, groups, and agencies in ways that are meaningful and practical; and (3) giving expert scientific and technical assistance to other EPA offices to help them formulate environmental policy.

Authority for EPA's research and development programs is included in the annual appropriation acts and through the following legislation.

- Clean Air Act, as amended in 1977 (P.L. 95-95)
- Environmental Research, Development and Demonstration Authorization Act (P.L. 94-475)
- Federal Insecticide, Fungicide and Rodenticide Act, as amended (P.L. 92-516)
- Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-217)
- Marine Protection, Research and Sanctuaries Act

(P.L. 92-532), as amended in March 1974 (P.L. 93-254)
National Environmental Policy Act (P.L. 91-190, as amended in August 1975)
Noise Control Act (P.L. 92-574) as amended by the Quiet Communities Act of 1978
Public Health Service Act, as amended (P.L. 78-410)
Resource Conservation and Recovery Act (P.L. 94-580),
Safe Drinking Water Act (P.L. 93-523), as amended in November 1977
Toxic Substances Control Act (P.L. 94-469)

EPA's Research Committee System

During the past two years, a Research Committee system has been established to serve as the cornerstone of ORD's program planning process. Currently there are thirteen committees, each addressing a subject area corresponding to the organization and function of EPA's regulatory program offices. Each Committee is co-chaired by a senior manager from ORD and a senior manager from the corresponding regulatory office. The thirteen Research Committees are:

Drinking Water
Energy
Gases and Particles
Hazardous Air Pollutants
Industrial Wastewater
Mobile Source Air Pollution
Municipal Wastewater and Spill Prevention
Oxidants
Pesticides
Radiation
Solid Waste
Testing and Assessment
Water Quality

ORD's Extramural Program

The Office of Research and Development (ORD) establishes its objectives and priorities in response to the overall mission and priorities of EPA and is highly concerned with solving specific priority problems in addition to advancing scientific knowledge. Although the scope of ORD projects may vary from fundamental research to the full-scale engineering demonstration of new pollution control processes, all projects are directed at meeting specified objectives as determined by the Agency's Zero Base Budgeting Process (ZBB). These objectives are described in each of the "decision units," a planning category within the ZBB Process. Each decision unit has a pre-defined goal which fits into the framework of the Agency's overall mission. A description of each decision unit and the funds available for extramural assistance begins on page 6 . These are listed alphabetically within each media (i.e., Air, Drinking Water, etc.).

Although much of ORD's external research is solicited by the office, individuals and organizations may submit unsolicited proposals.

OFFICE/LABORATORY ABBREVIATIONS

Code	
ECAO/Cin	Environmental Criteria and Assessment Office/ Cincinnati, OH 45268 (513) 684-7406
ECAO/RTP	Environmental Criteria and Assessment Office/ Research Triangle Park, NC 27711 CML (919) 541-2266 FTS 629-2266
EMSL/Cin	Environmental Monitoring and Support Laboratory/Cincinnati, OH 45268 (513) 684-7301
EMSL/LV	Environmental Monitoring Systems Laboratory/ Las Vegas, NV P.O. Box 15027 Las Vegas, NV 89114 CML (702) 798-2100 FTS 595-2100
EMSL/RTP	Environmental Monitoring Systems Laboratory/ Research Triangle Park, NC 27711 CML (919) 541-2106 FTS 629-2106
ERL/Athens	Environmental Research Laboratory/Athens, GA College Station Road Athens, GA 30613 CML (404) 546-3134 FTS 250-3134
ERL/Cor	Environmental Research Laboratory/Corvallis, OR 200 SW 35th Street Corvallis, OR 97330 CML (503) 757-4601 FTS 420-4601
ERL/Dul	Environmental Research Laboratory/Duluth, MN 6201 Congdon Boulevard Duluth, MN 55804 CML (218) 727-6692 FTS 783-9550

ERL/GB	Environmental Research Laboratory/Gulf Breeze, FL Sabine Island Gulf Breeze, FL 32561 CML (904) 932-5311 FTS 686-9011
ERL/Narr	Environmental Research Laboratory/Narragansett, RI South Ferry Road Narragansett, RI 02882 CML (401) 789-1071 FTS 838-4843
ESRL/RTP	Environmental Sciences Research Laboratory/ Research Triangle Park, NC 27711 CML (919) 541-2191 FTS 629-2191
HERL/Cin	Health Effects Research Laboratory/ Cincinnati, OH 45268 (513) 684-7401
HERL/RTP	Health Effects Research Laboratory/ Research Triangle Park, NC 27711 CML (919) 541-2281 FTS 629-2281
IERL/Cin	Industrial Environmental Research Laboratory/ Cincinnati, OH 45268 (513) 684-4402
IERL/RTP	Industrial Environmental Research Laboratory/ Research Triangle Park, NC 27711 CML (919) 541-2821 FTS 629-2821
MERL/Cin	Municipal Environmental Research Laboratory/ Cincinnati, OH 45268 (513) 684-7951
OEET/HQ	Office of Environmental Engineering and Technology (RD-681) Washington, DC 20460 (202) 755-4857

OEPER/HQ	Office of Environmental Processes and Effects Research (RD-683) Washington, DC 20460 (202) 426-0803
OER/HQ	Office of Exploratory Research (RD-675) Washington, DC 20460 (202) 755-0455
OHEA/HQ	Office of Health and Environmental Assessment (RD-689) Washington, DC 20460 (202) 755-3768
OHR/HQ	Office of Health Research (RD-682) Washington, DC 20460 (202) 426-2382
OMTS/HQ	Office of Monitoring and Technical Support (RD-680) Washington, DC 20460 (202) 426-2382
OPSA/HQ	Office of the Principal Science Advisor (RD-676) Washington, DC 20460 (202) 755-0477
RSKERL/Ada	Robert S. Kerr Environmental Research Laboratory/ Ada, OK P.O. Box 1198 (S. Craddock & Kerr Lab. Road) Ada, OK 74820 CML (405) 332-8800 FTS 743-2224

AIR

Characterization and Measurement Methods Development

This research program is designed to provide EPA with sampling, analysis, and measurement techniques to detect and identify pollutants in ambient air, and to characterize emissions from stationary and mobile sources. The methods developed will be used in support of regulatory and enforcement activity relating to National Ambient Air Quality Standards, New Source Performance Standards, National Emission Standards for Hazardous Pollutants, and mobile source emission standards, and in support of air transport and fate research. Research efforts of this program include the development and refinement of methods to measure fine and inhalable particulates, carbon fibers, volatile organic compounds, and sulfer and nitrogen oxides. In addition, source apportionment models are being developed to determine individual source contributions to ambient levels of hazardous air pollutants and particulates. The Industrial Environmental Research Laboratory of Cincinnati is assessing the adequacy of existing technology to control the release of carbon fibers during waste disposal and incineration.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/cin	David G. Stephan	600,000
ESRL/RTP	A. Paul Altshuller	3,370,000
OEPER/HQ	Deran Pashayan	240,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

AIR

Environmental Processes and Effects

The Clean Air Act and Amendments require that EPA establish Ambient Air Quality Standards, and review these standards at five year intervals. To support this activity, the Corvallis Environmental Research Laboratory is evaluating the environmental fate of atmospheric pollutants, and the effects of these pollutants on natural and managed terrestrial ecosystems. This research includes evaluation of the effects of specific gaseous pollutants and particulates, and the effects of complex pollutant mixtures. Researchers are also investigating the degree to which natural and cultivated vegetation contributes to ambient levels of reactive hydrocarbons. These research efforts utilize field evaluations and controlled exposure experiments.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Corv	Thomas A. Murphy	1,540,000
OEPER/HQ	David E. Weber	60,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

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AIR

Health Effects/ Criteria Pollutants

The objective of this research is to conduct studies on those air pollutants for which Ambient Air Quality Standards have been set. Every five years EPA must present an updated health data base to support maintenance or revision of the Standards. The major goal of this program is to improve substantially the existing health effects data base on those pollutants for which these Standards have been set. This research will include studies of both acute and chronic animal toxicology, controlled human exposure, and epidemiology. The program will place emphasis upon designing and performing studies which permit EPA to assess the health effects resulting from exposure to ambient levels of these pollutants.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/RTP	Gordon Hueter	4,170,000
OHR/HQ		300,000

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AIR

Health Effects/ Non-Criteria Pollutants

These research efforts include evaluations of animal toxicology studies, clinical studies, epidemiological studies, and laboratory support work. The most immediate goal of the toxicological studies is to determine the acute and chronic effects of inhalation of "coarse-mode particles," "fine-mode particles," particle/gas combinations, and lead. New facilities, models, and methodologies are under development to improve the quality of this research. Clinical studies of humans help determine the acute health effects from exposure to fine-mode aerosols. Later, epidemiologic studies of populations exposed to airborne sulfur oxides and particles will further pinpoint the health effects of these pollutants.

Additional research focuses on the health effects of non-criteria hazardous pollutants. Maps portraying carcinogenic "hot spots" will be updated. Subsequent assessments of carcinogenicity can be accomplished using bioassays, human exposure assays, animal exposure tests, and epidemiologic studies. A battery of additional tests will evaluate the non-carcinogenic toxicity of hazardous air pollutants.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/RTP	Gordon Hueter	7,760,000
OHR/HQ		1,640,000

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AIR

Health Effects-Transportation Sources

The Clean Air Act and Amendments give to EPA the responsibility to develop test methods to evaluate the human health effects of fuels and fuel additives, and emissions from mobile sources. The primary objective of this research program is to develop techniques to evaluate the potential mutagenic, carcinogenic, and cytotoxic effects of diesel and synfuel emissions.

Research efforts include the development and application of short term bioassays and other laboratory techniques, development of methods for the study of the human cardiovascular effects of carbon monoxide and carbon monoxide/ozone mixtures, study of the effects of ambient CO on outcomes of pregnancy, and studies of CO effects on cardiovascular and CNS development in the animal fetus and neonate.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/RTP	Gordon Hueter	1,150,000
OHR/HQ		2,620,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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AIR

Industrial Processes

Assessment of industrial pollution emissions is the primary goal of this research. One project involves demonstration of a volatile organic compound pollution control device for textile printing plants. Other work, representing a continuation of earlier petrochemical plant research, tests VOC leak detectors and repair programs. A report will detail ways of measuring industrial flare emissions from burning organic chemicals under various operating conditions, and a comprehensive document describing flare emissions will be issued.

Supercritical fluids can be used to recover VOCs from activated carbon. Research efforts include evaluating regeneration processes for various compounds, constructing an operating activated carbon VOC unit, and evaluating the application of catalytic incineration to various VOC emissions. Other studies involve the identification of toxic emissions from ferrous metallurgy sources such as coke by-products, quenching, preheating, iron foundry smelting, and electric furnace emissions.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David G. Stephan	1,080,000
IERL/RTP	John K. Burchard	1,790,000
OEET/HQ		150,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

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AIR

Monitoring Methods and Systems

The development, evaluation, and improvement of systems for monitoring air pollution is an essential part of EPA's Clean Air Program. Approximately 160 sampling stations have been established to measure particulates, $SO_4^=$, NO_3^-, and trace elements. New methods of measuring sample mass and constituents are assessed at these testing sites. New extraction and fractionation schemes are being developed to separate organic matter from ambient particulates. Other sampling activities, such as measuring trace elements, ambient organic compounds, and ambient particulate matter, are also being tested. In addition, alternative sampling and monitoring techniques are evaluated and improved.

Methods of monitoring nonmethane hydrocarbons are undergoing review. By examining data collected by a multispectral scanner during persistent air pollution episodes, existing data acquisition systems can be evaluated. Personal exposure monitors, particularly methods of monitoring asbestos and arsenic pollution, are being developed and evaluated.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/RTP	Thomas R. Hauser	2,940,000
EMSL/LV	Glenn E. Schweitzer	50,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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AIR

Quality Assurance

This research program is designed to ensure that monitoring and analysis methods used to support EPA's responsibilities under the Clean Air Act and Amendments are accurate, reliable, and cost-effective.

Research efforts include: standardization of analytic techniques, testing and validation of methods for monitoring ambient pollutant levels and source emissions, preparing and maintaining quality control standard reference samples, conducting performance audits, and reviewing data management. The program also provides assistance to Quality Assurance Management Staff, Regions, and state and local agencies to help implement EPA's mandatory Quality Assurance Program.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/RTP	Thomas R. Hauser	2,390,000
EMSL/LV	Glenn E. Schweitzer	90,000

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AIR

Technical Support

The objectives of the Air Technical Support Program are to assist the Program Offices and the Regions to obtain accurate and timely data for the implementation of Agency decisions and Congressional mandates in support of the Clean Air Act. A major emphasis is on sampling and analysis to support developing regional, state or national air strategies; supporting the assessment of the effectiveness of existing regulations; developing data for future regulatory actions or for validation of models; collecting, analyzing, and interpreting data needed for enforcement actions; or providing expertise not readily available in other parts of the Agency. In addition, routine analyses are carried out to develop trend data (such as on long-term ozone and particulate levels) and to analyze components in fuels and fuel additives. The Program also supports emergency response activities.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/RTP	Thomas R. Hauser	650,000
EMSL/LV	Glenn E. Schweitzer	310,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

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AIR

Transport and Fate

The goal of this program is to develop a comprehensive understanding of the physical, chemical, and meteorological processes that influence the movement, modification, and fate of air pollutants. The Environmental Sciences Research Laboratory at Research Triangle Park is investigating specific environmental processes that effect transport and transformation of pollutants, and is developing, testing, and validating simulation and predictive models of transport and fate of pollutants such as ozone, fine and inhalable particulates, and hazardous air pollutants. In addition, this program is investigating the specific role of naturally occurring hydrocarbons in elevating rural ozone levels. Research will also determine the role of air pollutants in producing regional visibility degradation. Results of this research will be utilized to support Agency regulatory and enforcement decisions relating to the National Ambient Air Quality Standards and the National Emission Standards for Hazardous Air Pollutants.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ESRL/RTP	A. Paul Altshuller	9,890,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

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DRINKING WATER

Control Technology and Groundwater Protection

Work on organics includes several cooperative field studies with municipal water treatment facilities throughout the U.S. The use of granular activated carbon for organics removal, and the ability to reactivate the carbon following usage are under investigation. Analytical methods are being developed for identification and quantification of organic contaminants, both volatile and nonvolatile, general inorganic contaminants, and asbestos.

Removal of inorganics requires specialized treatment techniques. Researchers are investigating the effectiveness of reverse osmosis and ion exchange systems. An important area of investigation is the contamination of drinking water as it is carried through the distribution system. The control of the corrosion of absestos-cement pipe is being studied using such variables as pH, alkalinity, and addition of corrosion control chemicals. Attention is being given to the identification, characterization and measurement of asbestos fibers. Specialized techniques for the analysis of arsenic, selenium, chromium, and mercury are also being developed.

Microbiological research will focus on treatment processes that remove bacteria and viruses. The effectiveness of various disinfectants on microbiological quality will be addressed. New and improved tests for bacteria identification are needed.

Research into the protection of underground water sources is being carried out at the Robert S. Kerr Environmental Research Laboratory at Ada, Oklahoma. The goal of this research is to provide the scientific basis for regulatory and management decisions related to the protection of groundwater supplies. Specific research areas include improved methods for investigating groundwater quality, characterization of the underground environment and its effect on pollutants, development of methods to reliably predict subsurface movement and transformation of pollutants, and evaluation of groundwater rehabilitation techniques.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/Cin	Robert L. Booth	450,000
MERL/Cin	Francis T. Mayo	7,580,000
ERL/Athens	David W. Duttweiler	900,000
RSKERL/Ada	Clinton W. Hall	1,120,000
OEET/HQ		50,000

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DRINKING WATER

Health Effects

Research in the area of the health effects associated with contaminants of drinking water is broadly divided into the study of organic, inorganic and microbiological agents. Research on organics is focusing on examination of those treatment methods which might create harmful organic compounds during treatment. Two treatment practices of special concern are disinfection and the use of chemical additives for flocculation and filtration. Researchers will identify the organics resulting from such treatment, and will conduct toxicologic investigations to determine their adverse health effects.

Another important area of research is the relationship between inorganics and the incidence of cardiovascular diseases. In addition to laboratory investigations, epidemiologic studies are planned. Other inorganics research will focus on the assessment of health effects related to lead, barium, and arsenic.

A continuing aspect of microbiological research is the surveillance of waterborne diseases. Research into new identification techniques for pathogens in both water and clinical specimens is planned.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	9,050,000
OEET/HQ		240,000

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DRINKING WATER

Monitoring Systems and Quality Assurance

Accurate and precise analytic methods for measuring drinking water constituents are necessary for enforcement of the Safe Drinking Water Act. Researchers are continuously called upon to develop and refine techniques for the sophisticated water analysis required by the Agency both routinely and for specialized pollution problems. In order to check the accuracy of the numerous laboratories performing analyses, quality control check samples for trace metals, nitrate-fluoride, pesticides, herbicides, trihalomethanes, turbidity, and free residual chlorine are maintained and distributed. In order to monitor the microbiological quality of drinking water, it is often necessary to use indicator organisms as a measure of pollution. Work will continue to improve detection methods for specific pathogens. As new detection methods are developed, researchers will also develop techniques for water sample collection, preservation, transport, and storage.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/Cin	Robert L. Booth	430,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

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ENERGY

Atmospheric Transport and Transformation of Energy-Related Pollutants

Some energy-related pollutants adversely affect air quality by reducing visibility, contributing inhalable fine particulates, or causing atmospheric acid formation. The Environmental Sciences Laboratory at Research Triangle Park is conducting research into the dispersion, transport, and transformation of pollutants in the atmosphere. The goals of this research are increased understanding of the environmental processes acting on energy-related pollutants, and the development of accurate pollutant dispersion models. Tested and validated models will support the enforcement of the regulations and standards of the Clean Air Act and Amendments.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ESRL/RTP	A. Paul Altshuller	2,560,000
OEPER/HQ	Daniel Golomb	4,330,000 †

†Most for interagency transfer.

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Environmental Assessment of Conventional and Advanced Energy Systems

This program evaluates the environmental impact of pollutants related to conventional and alternative energy technology, and assesses the effectiveness of energy-related pollution control practices. Assessments of fossil fuel, wood burning, geothermal, waste-as-fuel, and solar technologies are carried out by the Industrial Environmental Research Laboratories at Research Triangle Park and Cincinnati. In addition, the Cincinnati Lab is investigating the impact and control of indoor air pollutants such as radon, asbestos, formaldehyde, and carbon monoxide. Residential combustion units will be tested to evaluate potential mutagenic and carcinogenic emissions and the effectiveness of maintenance procedures in emission control.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David G. Stephan	2,000,000
IERL/RTP	John K. Burchard	4,210,000
OEET/HQ		4,080,000 †

†Most for interagency transfer.

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**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Flue Gas Particulate Control

This research program is designed to identify the sources of, and reduce exposure to, inhalable particulate matter. The Industrial Environmental Research Laboratory at Research Triangle Park is investigating methods to monitor and control inhalable particulate emissions from industries, utilities, and "fugitive" sources such as unpaved roadways. Principal research areas are improvement of existing technology and development, and assessment of new control methods. Control methods being investigated include scrubber design changes, flue gas conditioning, filter material selection, and electrostatic effects. In addition, field measurements and assessments will be conducted to establish a comprehensive particle emission and control data base. The data and technology resulting from this research effort will be used to support EPA responsibilities under the Clean Air Act and Amendments, particularly New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD), and State Implementation Plan (SIP) guides for non-compliance areas.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/RTP	John K. Burchard	6,310,000
OEET/HQ		590,000

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ENERGY

Flue Gas Particulate Control

This research program is designed to identify the sources of, and reduce exposure to, inhalable particulate matter. The Industrial Environmental Research Laboratory at Research Triangle Park is investigating methods to monitor and control inhalable particulate emissions from industries, utilities, and "fugitive" sources such as unpaved roadways. Principal research areas are improvement of existing technology and development, and assessment of new control methods. Control methods being investigated include scrubber design changes, flue gas conditioning, filter material selection, and electrostatic effects. In addition, field measurements and assessments will be conducted to establish a comprehensive particle emission and control data base. The data and technology resulting from this research effort will be used to support EPA responsibilities under the Clean Air Act and Amendments, particularly New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD), and State Implementation Plan (SIP) guides for non-compliance areas.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/RTP	John K. Burchard	6,310,000
OEET/HQ		590,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Flue Gas Sulfur Oxide Control

The Clean Air Act and Amendments direct EPA to assess existing and innovative flue gas desulfurization (FGD) technology and to establish emission standards that protect or improve air quality. The Agency's research into FGD technology is conducted by the Industrial Environmental Research Laboratory at Research Triangle Park. This research program is designed to demonstrate reliable and cost-effective control technology for industry and utilities. Control methods such as wet and dry scrubbing, and spray dryer and alkali injection baghouses are being assessed in prototype and full-scale operations. Results of this research will support the Agency's responsibilities relating to State Implementation Plans, New Source Performance Standards, and Prevention of Serious Deterioration programs.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/RTP	John K. Burchard	2,510,000
OEET/HQ		630,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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ENERGY

Fuel Extraction

The goals of this research program are assessment of the environmental hazards of, and development of control methods for, domestic fuel extraction technology. The Industrial Environmental Research Laboratory at Cincinnati is investigating the environmental effects of surface mining, spoil disposal and effluents, and reclamation; non-conventional uranium extraction; and production of gas from sands, shale, coal, and heavy oil. The Lab is also evaluating the effectiveness of control technology to protect the quality of air, and of surface and groundwater. The Municipal Environmental Research Laboratory at Cincinnati is investigating techniques to control and clean oil spills on land and water, and to restore contaminated shorelines. This research will result in preparation of user manuals on chemical agents, analysis techniques, and restoration hardware and methods to help meet EPA, utility, and state needs.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David G. Stephan	1,100,000
MERL/Cin	Francis T. Mayo	520,000
OEET/HQ		290,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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ENERGY

Fuel Processing Preparation and Advanced Combustion

This research effort is designed to assure that development of alternative energy technologies--such as coal liquifaction, coal gasification, biomass conversion, oil shale retorting, and fluidized bed combustion—is accompanied by development of adequate pollution control and monitoring technology. The Environmental Research Laboratory at Corvallis is developing and evaluating terrestrial bioassay techniques to assess direct and indirect environmental effects of emerging energy technology. Industrial Environmental Research Laboratories at Cincinnati and Research Triangle Park are analyzing emissions and effluents, and evaluating control technologies in bench scale and pilot plant research. These studies are designed to accurately characterize the physical, chemical, and biological properties of alternative energy processes and their by-products. Pollution Control Guidance Documents will be prepared, reviewed and issued.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David G. Stephan	4,620,000
IERL/RTP	John K. Burchard	10,290,000
ERL/Corv	Thomas A. Murphy	90,000
OEET/HQ		750,000 †

†Most for interagency transfer.

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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ENERGY

Health Effects of Energy-Related Pollutants

The goals of this research program are to assess the human health risk associated with energy production and use, and to provide information necessary for the design and enforcement of exposure standards. Research efforts include human epidemiological and clinical studies, animal toxicology, the development and validation of rapid and sensitive bioscreening methodologies, and evaluation of methods to concentrate waterborne energy-related organic pollutants. An increasing emphasis is being placed on pollutants associated with advanced fossil fueled systems, such as coal gasification, direct and indirect coal liquifaction, and oil from shale technologies.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	490,000
HERL/RTP	Gordon Hueter	1,350,000
OEPER/HQ	Charles Nauman	15,440,000 †

†Most for interagency transfer.

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD 675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Measurement Systems and Instrumentation Development for Energy-Related Pollutants

The research goals of this program are to develop and test improved monitoring and measurement techniques, and to provide a data base for EPA decisions concerning energy-related air pollutants. One aspect of this research is the development and refinement of personal monitors that can accurately and reliably determine actual human exposure to particulates, toxic organics, and sulfur oxides. Other efforts are developing advanced techniques for monitoring pollutants resulting from emerging energy technology. A study of methods to monitor visibility in Class I areas (areas given maximum protection against deterioration in air quality) and in urban areas is also underway. In addition, this research program is designing quality control guidelines for acid rain monitoring, and is compiling a comprehensive national repository for acid rain monitoring data.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/RTP	Thomas R. Hauser	970,000
IERL/RTP	John K. Burchard	150,000
ESRL/RTP	A. Paul Altshuller	2,460,000
EMSL/LV	Glenn E. Schweitzer	1,250,000
ERL/Athens	David W. Duttweiller	250,000
OEPER/HQ	James T. Stemmle	2,870,000 †

†Most for interagency transfer.

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Nitrogen Oxide Control

Nitrogen oxide (NO_X) emissions result from nearly all fossil fuel combustion. The Industrial Environmental Research Laboratory at Research Triangle Park is investigating a wide range of fuel processing, combustion modification, and post-combustion cleaning techniques to reduce NO_X emissions. Technology developed through this research effort is evaluated in bench and pilot scale programs. Research goals are the development and demonstration of cost-efficient low emission combustion technology that can be applied to a full range of fossil fuel combustion sources. The results of this research effort are used to support regulatory decision making at the Office of Air Quality Planning and Standards.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/RTP	John K. Burchard	10,140,000
OEET/HQ		820,000

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For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ENERGY

Transport, Fate, and Effects of Energy-Related Pollutants

The expansion of domestic energy production increases the need to understand the environmental behavior of energy-related pollutants. The objectives of this research program are to identify the processes that govern the emission, movement, and transformation of energy-related pollutants, and to evaluate their environmental effects. Pollutant behavior in marine, freshwater, and terrestrial ecosystems is studied in field research and through use of laboratory microcosms. The program investigates the transport and fate of pollutants resulting from both conventional and alternative energy technology. Results of this research program will support the development and refinement of regulatory strategy to minimize adverse environmental effects of energy exploration and production.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
RSKERL/Ada	Clinton W. Hall	260,000
ERL/Corv	Thomas A. Murphy	530,000
ERL/Dul	Norbert A. Jaworski	750,000
ERL/Narr	Tudor T. Davies	630,000
ERL/GB	Henry F. Enos	1,130,000
OEPER/HQ	Alfred A. Galli	10,970,000 †

†Most for interagency transfer.

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INTERDISCIPLINARY

Anticipatory Research and Development

The objectives of this program are to identify and characterize emerging problems before serious crises occur, develop approaches to long-term problems, and assure that basic studies needed to support applied research activities are conducted. The extramural program is divided into two components with the following purposes: 1) Center Support Research—to provide long-term support for basic studies in key research areas; and 2) Directed Programs—to conduct systematic studies of emerging interdisciplinary problems and to support the methodological development and use of exploratory environmental sciences. Emphasis is presently on study of acid rain, environmental cancer, the use of long-term biomonitoring, the development of methodologies for estimating the economic benefits of environmental protection, and environmental forecasting and assessment to identify potentially significant future environmental trends and contingencies, and assess their public health, public welfare, and environmental policy implications.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
OER/HQ	Dennis A. Tirpak	5,360,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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INTERDISCIPLINARY

Minority Institutions Research Support (MIRS)

The objectives of this program are: (1) to identify existing and potential environmental research capabilities within minority institutions and assist these institutions to participate in EPA research activities; (2) to help minority institutions become more competitive; (3) to award research and demonstration grants/cooperative agreements to minority institutions to support EPA research objectives, and (4) to promote a good working relationship between the Agency and participating institutions.

The MIRS program staff provides assistance to potential applicants.

Applications for support be limited to approximately $80,000 per year and for periods not to exceed 36 months.

Proposals will be accepted from any university or four-year college in the United States or its territories that has at least 25% minority students, including Black, Hispanic, Alaskan Native, American Indian, Puerto Rican, or other disadvantaged ethnic minorities. American Indian non-profit organizations, councils, and colleges are also eligible for support.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
OER/HQ	Clyde Bishop	740,000

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INTERDISCIPLINARY

Scientific Assessment

The objective of this program is to enhance the risk assessment capabilities within the Agency and develop scientific criteria concerning the effects of pollutants on ecological systems and human health. Initial risk assessment activity will stress the development of guidelines and methodologies for Agency-wide use that determine the potential risk from exposure to specific pollutants. A primary objective is to provide a central focal point for quality control of all Agency risk assessment activities. Following guidelines development, a review and oversight activity will be implemented to insure consistency and comparability of the assessments done by other Agency offices. Risk assessments will be developed for the program offices upon their request. Targeted areas for assessment include exposure, and carcinogenic, reproductive, and other chronic effects. Criteria development on pollutant effects will be conducted in response to program office needs and will take the form of criteria documents, health assessments and special reports.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
OHEA/HQ	Elizabeth L. Anderson	120,000
ECAO/Cinn	Jerry F. Stara	720,000
ECAO/RTP	Lester D. Grant	680,000

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PESTICIDES

Ecological Effects

Wise use of pesticides requires not only an understanding of the pesticide's impact on the target species, but also of the eventual fate of the pesticide and its impact on other organisms. Sensitive bioassay techniques are one effective means of acquiring this information. Information is also gained from laboratory, microcosm, or field studies that measure the response of various species to pesticide exposure. These studies may also reveal the ultimate ecological impact of pesticide exposure. The Corvallis laboratory will conduct studies focusing on the effects of pesticides on terrestrial environments. It is anticipated that 6-8 pesticides will be studied annually.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Corv	Thomas A. Murphy	170,000
OEPER/HQ	William Murray	70,000

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PESTICIDES

Exposure Assessment

The Office of Pesticide Programs requires specific information on the concentrations, transport, and eventual fate of pesticides in the environment. The Pesticide Exposure Assessment program provides estimates of concentrations and improves methodologies used to arrive at these estimations. Different EPA laboratories tailor studies to the specific environmental media. Corvallis will assemble data bases linking application of biocides and fertilizers to effects in the terrestrial environment. Duluth plans to conduct studies related to the freshwater environment, such as the impact of pesticide bioaccumulation in fish. Gulf Breeze will collect information related to the estuarine/marine environment. Athens will establish a pesticide environmental exposure assessment team, which will coordinate data from laboratories involved in this aspect of pesticide research, establish data bases, calibrate models, estimate expected environmental concentrations of OPP-specified pesticides, and improve transformation test methods.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Athens	David W. Duttweiler	200,000
ERL/Corv	Thomas A. Murphy	18,000
ERL/Dul	Norbert A. Jaworski	18,000
ERL/GB	Henry F. Enos	110,000
OEPER/HQ	William Murray	30.000

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PESTICIDES

Health Effects

The pesticides health effects program focuses on determining the human exposure to chemical pesticides and the health effects of chemical and biological pesticide exposure. Activities related to exposure assessment include studies of human exposure during home and garden use of pesticides, and the study of crop workers exposed to pesticide residues. Air sampling devices for pesticides in various exposure situations and model systems for determining exposure of inhaled pesticides in humans are being developed. The determination of health effects involves investigations for carcinogenicity, teratogenicity, mutagenicity, neurotoxicity and other adverse effects. Planned studies include dose-response relationships for specific pesticides in different species and development of animal models to determine specific toxicities.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	120,000
HERL/RTP	Gordon Hueter	230,000
OHR/HQ		50,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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PESTICIDES

Integrated Pest Management

This research program reflects the growing national concern over the environmental and public health impacts of increasing use of chemical pesticides, increased pest resistance, and the rising cost of pesticide production. The objective of the research effort is the development of an integrated system of pest control that includes biological, cultural, and chemical techniques. The specific goals of the program are: increased understanding of pest/host interaction, development of pest resistant plants, improved data collection methods, development of models to forecast pest population and to optimize control, and the design and demonstration of effective and economical pest management systems. In addition to agricultural pests, this research effort is developing systematic approaches to control urban weed and insect pests, and aquatic weeds.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
OEPER/HQ	Darwin R. Wright	2,760,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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PESTICIDES

Quality Assurance

Pesticide sample analysis necessary for regulatory action requires that results be specific, accurate, and reproducible. In order to ensure such quality measurement, EPA maintains a repository of pesticide calibration materials. These materials are distributed to EPA, FDA, and other federal and state laboratories. Analytical tools and calibration technologies are being expanded to address specific priority pesticides. An analytical Standards Manual will be revised and updated. Since analytical reference standards may not be available from producers, work is planned for purifying and synthesizing such analytical standards.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/RTP	Gordon Hueter	14,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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RADIATION

Health Effects-
Nonionizing Radiation

The goal of this program is to evaluate the effects on human health of chronic exposure to low levels of microwave and radio frequency radiation. Extensive laboratory studies will examine the behavioral, teratogenic, immunological, and neurological effects of this nonionizing radiation. Results of laboratory research and epidemiological studies will be compiled into a scientific information base to support Agency guideline decision-making.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/RTP	Gordon Hueter	840,000

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For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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SOLID AND HAZARDOUS WASTE

Control Technology

The focus of many research efforts under this program is to improve existing techniques and develop new methods for the safe management of waste disposal sites. Other efforts are designed to improve identification and remedial maintenance of uncontrolled waste sites. Research efforts range from development of new monitoring technology to technical and environmental evaluation of disposal sites. This research program has as its overall goal the establishment of a technical base of support for Agency efforts to develop guidelines and regulations for solid and hazardous waste management.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/CIN	Robert L. Booth	550,000
IERL/Cin	David G. Stephan	8,060,000
MERL/Cin	Francis T. Mayo	5,460,000
HERL/Cin	John Garner	580,000
EMSL/RTP	Thomas R. Hauser	590,000
IERL/RTP	John K. Burchard	1,350,000
EMSL/LV	Glenn E. Schweitzer	1,970,000
RSKERL/Ada	Clinton W. Hall	1,510,000
OEET/HQ		1,510,000
ECAO/Cin		190,000

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TOXIC SUBSTANCES

Characterization and Measurement Methods Development

Even trace quantities of certain substances can be toxic. In order to monitor such chemicals and assess their effects, there is a constant need for improved techniques.

At the Environmental Research Laboratory at Naragansett, work is planned for development of measurement methods for use in marine systems. This will include identification and quantification of volatile organics in estuarine water and organics in suspended particulate matter.

Researchers at the Athens Environmental Research Laboratory are concerned with the measurement of toxics bound to sediments and aquatic plants. Researchers will select a class of organic chemicals and develop methodologies for their separation, identification and quantification.

Identification and measurement of toxic substances in air is the focus of the work planned by the Environmental Sciences Research Laboratory in Research Triangle Park. Their work will concentrate on developing improved techniques for measurement of organics. This will include ways to minimize the problems encountered in sampling large volumes of air for particulate organics and the development of high performance liquid chromatography (HPLC) as an analysis methodology.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ESRL/RTP	A. Paul Altshuller	260,000
ERL/Athens	David W. Duttweiler	150,000
ERL/Narr	Tudor T. Davies	130,000
OEPER/HQ	William Murray	20,000

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For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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TOXIC SUBSTANCES

Ecological Effects

The objective of the ecological effects program is to develop methodologies for defining the hazard and exposure of chemical substances to ecosystems. The ecological effects program also includes research directed towards defining human exposure to environmental toxicants. Exposure models are being developed for toxic substances in freshwater, estuarine-marine, terrestrial, air and multimedia environments. Models will take into consideration the physical and chemical properties of toxicants as well as environmental factors that govern their transport and transformation. These models will be validated using laboratory microcosms and field studies. Models will help to determine human exposure to a wide variety of toxic substances through all important pathways, air, water, and food. The Athens Laboratory will test and refine the EPA Exposure Analysis Modeling System (EXAMS), improve experimental laboratory microcosms, formulate a model of bioaccumulation of toxic chemicals in aquatic plants, and develop techniques using structure-activity relationships to predict environmental transport and transformation of organic chemicals.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	70,000
ESRL/RTP	A. Paul Altshuller	300,000
HERL/RTP	F. Gordon Hueter	20,000
ERL/Athens	David W. Duttweiler	1,510,000
ERL/Corv	Thomas A. Murphy	1,450,000
ERL/Dul	Norbert A. Jaworski	600,000
ERL/Narr	Tudor T. Davies	120,000
ERL/GB	Henry F. Enos	900,000
OEPER/HQ	William Murrary	2,280,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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TOXIC SUBSTANCES

Health Effects

The overall goal of the toxic substances research program is to develop and improve screening techniques used in predicting deleterious health effects that result from exposure to chemical substances. Information gained from these studies supports the development and implementation of regulations under the Toxic Substances Control Act. Numerous investigations are planned to determine the best screening tests for determining the carcinogenic, mutagenic, teratogenic, neurotoxic, and other toxic effects of chemical substances. In addition to laboratory investigations, epidemiological studies will be conducted. These studies will help to establish the effects of specific chemicals on humans and provide a data base for validating toxicological models.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	4,060,000
OHR/HQ		4,830,000
OPSA		1,210,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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TOXIC SUBSTANCES

Industrial Processes

EPA is sponsoring studies of both specific chemicals and selected industries to determine their potential for environmental damage. EPA is maintaining and expanding a data base that currently contains information on some 600 organic chemicals. This information includes location, product list, capacity, emissions and processes for those manufacturers involved. When the data base is completed it will include information about uses and potential exposures for major organic chemicals.

The toxicity of PCB's has resulted in concern over their use and disposal methods. Studies are underway to review alternative disposal methods. Studies of the plastics industry and the paint formulation industry are planned.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David Stephan	500,000
IERL/RTP	John K. Burchard	360,000
OEET/HQ	Carl Schafer	280,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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TOXIC SUBSTANCES

Technical Support

EPA laboratories are involved in the development of monitoring and screening methods to meet specific agency needs. Three laboratories are involved in these technical support activities.

The Environmental Monitoring Systems Laboratory in Research Triangle Park is involved in the development of specialized polymers to sample air pollutants with polar molecular charge configuration. Adsorbents currently available for air sampling are not suitable for these pollutants, since they either fail to capture the pollutant or fail to release it for laboratory analyses. Researchers at RTP will also analyze rainfall samples for toxic substances of interest to OPTS.

The Environmental Monitoring and Support Laboratory in Cincinnati is sponsoring the development and maintenance of a data base containing the mass spectra of toxic substances. The data base currently contains 33,898 spectra and plans call for the inclusion of 3000 more. The Las Vegas Laboratory is working to develop guidelines for validating stream models to predict toxic movement and fate; to refine advanced analyticial techniques such as gas chromatography coupled with Fourier transform infrared spectoscopy (GC/FTIR) and non extractive multielement methods; and to develop pollutant specific microbial screening tests.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/Cin	Robert L. Booth	100,000
EMSL/RTP	Thomas R. Hauser	420,000
EMSL/LV	Glenn E. Schweitzer	610,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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TOXIC SUBSTANCES

Transport and Fate

In order to determine or predict the effects a given chemical will have on the environment, information on its behavior in different media is required. The goal of this research project is to develop methodologies for predicting movement, persistence and bioaccumulation of chemicals in air, water, and terrestial environments, as well as in living systems. To meet the requirements of the Toxic Substances Control Act, evaluations of the fate and effects of some new compounds must be made within relatively short time periods.

Since existing information on these chemicals may be scarce, the use of structure-activity factors for rapid evaluations is being examined. Models are also under development for use in estimating exposure concentrations of chemicals in various media. These models will be validated using laboratory (microcosm) and field studies. The emphasis of the Athens Laboratory's research is the scientific basis of laboratory tests for molecular and environmental factors that govern chemical transport and transformation.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ESRL/RTP	A. Paul Altshuller	200,000
ERL/Athens	David W. Duttweiler	500,000
RSKERL/Ada	Clinton W. Hall	260,000
ERL/Corv	Thomas A. Murphy	170,000
ERL/Narr	Tudor T. Davies	70,000
OEPER/HQ	William Murray	150,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Characterization and Measurement Methods Development

The objective of this program is to provide identification and measurement techniques that provide data on substances found in water, sediments, and sludges. In addition to giving positive identification, these methods must be sufficiently sensitive to measure trace levels of the substances present. Specific attention is being given to detection methods for volatile organics, non-volatile organics, dissolved elements, and specific inorganics. Work in the area of volatile organics will include development of computerized data interpretation of mass and infrared spectral data. Since non-volatile organics are not amenable to analysis by GC/MS, new techniques including liquid chromatography are being studied. In the area of element detection, emphasis is being placed on the development of multielement techniques that determine several elements simultaneously. Many of the inorganic analytical problems require individual approaches.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Athens	David W. Duttweiler	200,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Chesapeake Bay

The Agency's Environmental Research Laboratory at Narragansett, RI is responsible for this research program designed to better understand and to protect the complex Bay environment. The laboratory is developing baseline data on the presence, transport, and fate of toxic organics and metals in Bay sediment, water, and organisms. Nutrient loading levels are being evaluated in order to develop models to identify areas of nutrient related water quality problems. Other research efforts investigate the effect of water quality on submerged aquatic vegetation and associated organisms. Results of this research will contribute to the design of strategies to protect and maintain the environmental quality and the economic and recreational value of the Bay.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Narr	Tudor T. Davies	1,880,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Freshwater Ecological Effects

The goal of this research program is to provide EPA with a legally defensible data base and the most scientifically credible methods for use in establishing water quality criteria and standards, effluent standards, and water disposal guidelines. Research includes the development of testing procedures to assess the impact on freshwater ecosystems of point and non-point pollution sources, and the impact of the disposal of dredged material; determination of the capacity of stressed ecosystems to recover following reduction of pollutant input; and analysis of freshwater wetlands to improve understanding of structure, function, and boundary definition.

The Corvallis Environmental Research Laboratory is engaged in a research program designed to develop an understanding of the transport of non-energy related pollutants in freshwater ecosystems, and to assess the effects of these pollutants on various compartments of rivers, lakes, and freshwater wetlands.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Corv	Thomas A. Murphy	990,000
OEPER/HQ	Herb Quinn	150,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Great Lakes

The Great Lakes research program carried out by the Duluth Environmental Research Laboratory through the Large Lakes Research Station at Grosse Ile, Michigan, provides the scientific information base necessary to effectively manage Great Lakes water quality in support of the revised United States/Canadian Water Quality Agreement of 1978. The goals of this research program are to identify water quality problems in the Great Lakes; to provide practical, cost-effective methods to predict pollutant impact; and to assist EPA and the International Joint Commission in the application of these methods to restore and maintain Great Lakes water quality.

Research efforts evaluate the impact of nutrient and atmospheric pollutant input, and the effects of power plants and dredged spoil disposal. Other efforts define pollutant pathways and develop predictive models for toxic chemicals, and asses human exposure levels.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Dul	Norbert A. Jaworski	659,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Health Effects

The health effects program includes a variety of studies that can be broadly divided into four areas: Water criteria, land application of sludge and treated wastewater, water reuse, and industrial wastewater reuse. These investigations include field and laboratory studies and many are continuations of ongoing research. Laboratory studies to determine the toxicity, carcinogenicity and teratogenicity of priority pollutants are underway. The application of short-term tests for predicting human health effects is also under evaluation.

Several epidemiological investigations are planned including determinations of: the relationship between swimming associated illnesses and water quality, disease rates in residents living near land sites receiving wastewater applications, health effects in families whose farms receive sludge for land application, and health effects of workers involved in composting. Other studies will focus on the inactivation, survival, and fate of viruses in wastewater, sludges, and soils.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
HERL/Cin	John Garner	4,830,000
OHR/HQ	Vilma Hunt	190,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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WATER QUALITY

Industrial Processes

As effluent guidelines and standards are developed, special attention is directed towards the specific problems of the industries affected. Program activites range from data base development to field evaluation of specific control technologies.

A computerized system for storage and retrieval of spill assessment, cleanup, and disposal procedures is being developed. Cincinnati's Industrial Environmental Research Laboratory is involved in the preparation of a "Treatability Manual" for control of priority pollutants and the operation of a computerized data base used for wastewater and hazardous solid waste characterization for the organic chemicals industry.

At the Robert S. Kerr Environmental Research Laboratory, evaluation of biological activated carbon treatment for removal of pollutants from wastewater is planned. The use of trickling filters and lagoons for treatment of metals will also be evaluated.

Resources are also being used to design, construct and operate control technologies for removal of hazardous pollutants. The Industrial Environmental Research Laboratory in Cincinnati is involved in studies of the electroplating industry, while at RTP researchers are involved in studies of iron and steel plants, the textile industry and the pesticides manufacturing industry. The Cincinnati laboratory is also evaluating an ion exchange wastewater treatment system.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
IERL/Cin	David G. Stephan	3,680,000
MERL/Cin	Francis T. Mayo	1,550,000
IERL/RTP	John K. Burchard	2,700,000
RSKERL/Ada	Clinton W. Hall	580,000
OEET/HQ		570,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Marine Ecological Effects

The Marine Ecological Effects program involves three major areas: ocean disposal, dredged material, and wetlands.

The impact of ocean outfalls on marine communities and ultimately human health involves determinations of the relationships among pollutant concentrations in the water, the ocean sediment, and fish tissues. Microcosms will be used to measure the biological responses of marine organisms to water and sediment pollution.

The disposal of dredged materials may pose serious problems to marine ecosystems. Researchers are developing a biossay for measuring acute and chronic effects in bottom-dwelling organisms. EPA is involved in the development of sediment quality criteria. Using information from bioassays, "safe" sediment concentrations may be developed for specific chemical pollutants and complex waste mixtures.

In the area of wetland research efforts are planned to determine wetland productivity and function. This information will be used to determine the relative value of wetlands, and the impact of the alteration of a wetland on its watershed.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Corv	Thomas A. Murphy	310,000
OEPER/HQ		10,000

For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Monitoring Methods and Systems

Under this program selected surface waters that receive effluents from publicly owned treatment works will be monitored to determine the effluent's contribution of toxic metals and their resulting impact on aquatic life.

Another planned effort involves the review of the existing water quality network for trend monitoring of conventional pollutants such as dissolved oxygen and phosphorous. This information will be used to propose a national trend monitoring network for waterborne toxic substances.

An important aspect of water quality monitoring is the detection of viruses. Improved methods for the rapid identification of and quantification of viruses in surface waters are being developed. Attention is being given to methods that recover small amounts of viruses from large volumes of water. Methods for collecting and identifying viruses in sewage and sludge are also being investigated.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/Cin	Robert L. Booth	580,000
EMSL/LV	Glenn E. Schweitzer	410,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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WATER QUALITY

Quality Assurance

The objective of this program is to ensure that analytical measurement data collected to monitor ambient water, waste, and effluents are valid and acquired through standardized methods. Quality assurance sample studies are conducted, and repositories are maintained for the quality control samples and reference materials that are the basis of water quality monitoring. Statistical and technical services are provided to Program and Regional Offices for performance evaluation studies, which are used to find analytical problems and prepare performance evaluation samples for ambient monitoring analyses. Laboratory intercomparison studies and on-site laboratory evaluations are performed, and the computerized interlaboratory test system is maintained. Protocols for screening methods are developed and the methods are standardized and validated.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/Cin	Robert L. Booth	3,890,000
EMSL/LV	Glenn E. Schweitzer	90,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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WATER QUALITY

Technical Support

The objective of this decision unit is to provide ORD support to Program and Regional Offices in the form of planning and consultation, the provision of laboratory facilities and equipment, and project management. Environmental information, particularly that related to the inspection of hazardous waste sites, is now being provided through the use of overhead monitoring technology (the Enviro-Pod program). The increasing development and sophistication of this technology has necessitated the institution of training programs, research on imagery interpretation techniques, and the preparation of handbooks to disseminate information on techniques and equipment. Other program activities include water quality and water quality management analyses, and the identification of geographic areas and populations to monitor exposure to selected pollutants.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
EMSL/LV	Glenn E. Schweitzer	380,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

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WATER QUALITY

Transport and Fate

Research into the transport and fate of pollutants affecting water quality includes environmental processes that move or modify pollutants, transport and fate models, and watershed management techniques. The results of research on environmental fate processes will be combined with a computerized data base being developed. The data base contains both specific and generalized river and lake environment data in addition to information on the physical and chemical characteristics of specific pollutants. All of this information will be used in the modification, improvement, and testing of exposure assessment models. Component models and field analysis will be used to evaluate the cost-effectiveness of alternative point and nonpoint source pollution control strategies. This technology will support the development of water quality criteria, evaluation of pesticides for registration, identification of control requirements, and determination of effluent limitations in stream areas limited by water quality standards. The main emphasis of the current year's effort is on establishing the computerized data base.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
ERL/Athens	David W. Duttweiler	660,000
OEPER/HQ	Herb Quinn	30,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Urban Systems and Toxics Residuals Management

This program includes four major areas of research focusing on the urban environment. The sludge management program includes development of better and more cost-effective ways of treating and disposing of sludge, evaluation and improvement of the environmental acceptability of all sludge processes, and support for EPA's Program Offices. Specific attention will be given to dewatering and thickening processes, anaerobic digesters, land application, and devices to remove toxicants from sludge.

Toxic pollutant control research produces information on the sources of toxic pollutants and on the treatability of such pollutants by conventional or innovative technology.

Plant operation and design activities will include the review and evaluation of facilities for sludge handling in major municipalities. A series of design information documents for public operated treatment works (POTW) will be prepared.

During FY 81 funding will also be used to support the innovative and alternative construction grants program, which provides incentive for use of better technology in waste water treatment facilities.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
MERL/Cin	Francis T. Mayo	5,340,000
OEET/HQ		150,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

WATER QUALITY

Wastewater Systems Control Technology

Development and evaluation of wastewater system control technology is underway at Cincinnati's Municipal Environmental Research Laboratory. This program includes development of wastewater processess including new biological processes, processes for removal of specific pollutants, and wastewater disinfection. Technologies for water conservation and reuse will also be examined. Another aspect of this program involves the study of urban runoff including its causes and effects, and control. The program also addresses the needs of wastewater systems in small communities.

The Robert S. Kerr Environmental Research Laboratory addresses wastewater control technologies related to land treatment and aquaculture. Studies of slow-rate land treatment, rapid infiltration systems, and overland flow systems are planned. The transport and transformation of pollutants in soils will also be addressed.

The effectiveness of filter feeding fish for removal of pollutants from municipal washwaters will be evaluated. The use of water hyacinth, and the effectiveness of natural and artificial wetlands for wastewater treatment are areas of planned investigations.

OFFICE/LABORATORY	CONTACT*	EXTRAMURAL FUNDS**
MERL/Cin	Francis T. Mayo	3,400,000
RSKERL/Ada	Clinton W. Hall	590,000
OEET/HQ		170,000

*For assistance and information on cooperative agreements and contracts, contact the individual named above.

For assistance and information regarding grants, contact the Office of Research and Development, (RD-675), Washington, D.C. 20460, or call 202/755-2532.

**Total funds available for grants, contracts, and cooperative agreements. All figures rounded down to the nearest $10,000.

ORD'S EXTRAMURAL PROGRAM

While some of the research funded for fiscal year 1981 will be done in-house by ORD's staff, much of the research will be accomplished by grant/cooperative agreement or contract. To explain how each of these is used, a brief discussion follows.

Contracts

A contract is used (1) whenever the principal purpose of the instrument is the acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; or (2) whenever an executive agency determines in a specific instance that the use of a type of procurement contract is appropriate.

All planned contracting is carried out competitively with notices of the availability of Request for Proposal (RFP) documents publicly advertised. Unsolicited contract proposals should not be submitted for such reports. The review/selection procedures followed may vary slightly from project to project, but all pertinent information regarding both the project objectives and criteria for evaluation of proposals will be included in each RFP package. The Laboratory Director should not be contacted for information on contracts that have been advertised since such communication may conflict with Federal Procurement Regulations and could serve to disqualify a prospective contractor from further consideration.

Solicited Contract Proposals

Requests for Proposals (RFP's) for all planned contracts will be advertised in the Commerce Business Daily issued by the U.S. Department of Commerce. A subscription to this publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. These advertisements will provide instructions for obtaining RFP packages from EPA's Contracts Management Division. Each RFP package will include detailed information describing the form and context of proposals to be submitted as well as the required time and place of submission.

EPA's Contracts Management Division publishes "Selling to EPA" to assist the business community in its efforts to find new markets in the Environmental Protection Agency. This publication includes the names and addresses of contracting offices in EPA and the Office of Research and Development laboratories, the types of products and services procured, general information about the Agency, and hints to aid businessmen in selling to EPA.

Unsolicited Contract Proposals

While most of ORD's contract research and demonstration is conducted through the use of RFP's to

solicit proposals, contracts can also be awarded on the basis of unsolicited proposals which meet the sole-source requirements of the Federal Procurement Regulations. Unsolicited contract proposals should be addressed to the Grants Administration Division (PM-216), Environmental Protection Agency, Washington, DC 20460. While no specific format is required, such proposals should generally contain:

1. Name, address and telephone number of the organization or individual submitting the proposal.

2. Date of preparation or submission.

3. Type of organization (profit, nonprofit, educational, individual, other).

4. Concise title.

5. Project objective.

6. Need, utility and significance of project

7. Scope of work, i.e., an outline and discussion of the purpose of proposed effort of activity, the method of attacking the problem, and nature and extent of anticipated results.

8. Experimental data developed by feasibility studies previously completed.

9. Estimated duration of the project, proposed starting and completion dates.

10. Scientific or technical references.

11. Names of key personnel to be involved, brief biographical information, including principal publications and relevant experience.

12. Equipment, facilities and personnel requirements.

13. Proposed budget, including separate cost estimates for salaries and wages, equipment, expendable supplies, services, travel, subcontracts, other direct costs and overhead.

EPA's Appropriation Act specifically provides that cost sharing must be included in contracts resulting from proposals for projects not specifically solicited. The extent of the cost sharing by the recipient will be decided after the proposal has been reviewed and determined to be of mutual interest to the grantee or contractor and the government.

The material submitted should contain both a technical and a business proposal. The technical proposal should clearly define the unique concept involved (as required for sole-source procurements) and include a plan for turning the concept into reality. It is suggested that the

technical proposal identify any proprietary aspects of the proposed ideas or process. The business proposal should include a detailed cost proposal, information concerning past Government contracts, and any special terms and conditions desired.

ORD Assistance Program

Grant Agreements

A grant is to be used when (1) the principal purpose of the relationship is the transfer of money, property, services or anything of value to the State or local government or other recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and (2) no substantial involvement is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the comtemplated activity.

Grant allocations are made by the Office of Exploratory Research. The primary area of grant concern is in anticipatory or exploratory research. Topics of special interest will be announced in flyers.

Cooperative Agreements

A cooperative agreement is used in lieu of a grant when (1) the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and (2) substantial involvement is anticipated between the executive agency, acting for Federal Government, and the State or local government or other recipient during performance of the contemplated activity.

Prior to applying for a cooperative agreement, contact with the cognizant Laboratory Director is encouraged. This will allow for the development of the appropriate relationship between the recipient of the agreement and ORD.

Exploratory Research Grants Program

In September 1979, the Office of Research and Development established an Office of Exploratory Research in response to recommendations made by an internal Grant Procedure Review Group. The new office was established to administer ORD's competitive research grants program as well as several other related programs (refer to the section on Interdisciplinary Research). The changes supporting this reorganization are also currently being incorporated in ORD's administrative regulations, 40 CFR Part 40.

Briefly summarized, these changes are as follows:

- *Central point of contact.* The Office of Exploratory Research (OER) serves as a central point of contact for interested researchers who desire additional information on exploratory research grant funds available (as opposed

to cooperative agreement funds), programs or projects of EPA interest, or application procedures. OER's task is to manage ORD's competitive exploratory research grants program and peer review process for research proposals.

- *Solicitations for Research Proposals.* ORD intends to enhance its research base by encouraging greater participation for research funding assistance through the use of research proposal solicitations. These solicitations utilize "flyers" or printed brochures, the *Federal Register* and other media of interest to the scientific community. Special encouragement is extended to scientists who have not previously received ORD extramural funding assistance, and qualified minority, handicapped, and female researchers.

- *Proposal/Application Review.* ORD utilizes a centralized peer review process, similar to that used by the National Institutes of Health, to review extramural proposals for research funding assistance. Reviews are tentatively scheduled for FY 1981 as follows, but may vary depending on the number of applications received.

Application Receipt Date	Peer Review	Funding Availability
October 15, 1980	December 1980	February 28, 1981
February 15, 1981	April 1981	June 30, 1981
June 1, 1981	July 1981	September 30, 1981

The review process may include site visits or ad hoc (mail) review in special instances. A sampling of requests for project continuations and/or funding increases of ongoing projects may also be subject to this review process.

The decision to fund or reject a proposal is based on the scientific peer review ranking, EPA research needs and priorities, and available resources. Acceptable applications which are of lower priority may be held for up to six months for possible funding.

- *Reporting Requirements.* Grant projects require progress reports as stipulated in the grant agreement, and a final report upon completion of the project. Cooperative agreement projects require a final report and other reporting requirements as may be determined by the ORD laboratory decision official at the time of the award. In some cases, an article reporting the results of the research for grant or cooperative agreement projects in a peer refereed journal may be substituted for a report. Selected awardees may also be requested to present project results at periodic seminars conducted by ORD.

- *Grants vs Cooperative Agreements.* The decision to fund or reject a grant proposal is made at HQ/EPA; decisions on cooperative agreements are made at the appropriate EPA laboratory.

  Most cooperative agreement applications are developed in consultation with ORD laboratory scientists or through solicitations. Because "substantial involvement" with the funding agency is required for cooperative agreement arrangements, this type of application should not be submitted without prior consultation with an EPA laboratory.

- *Grant Funds Available.* Grant funds are derived from each decision unit described in this *Program Guide.* Approximately 15% of the funds indicated have been reserved, according to Congressional mandate, for long-term exploratory research (also refer to Anticipatory Research). In FY 1981, approximately $27 million will be awarded through the competitive grants program, which is administered by the Office of Exploratory Research. All applications for research funding assistance will undergo peer reviews for scientific merit, as well as relevancy review to ensure conformity with the objectives of each decision unit funding source.

Application Procedures

The preapplication, application, and review processes differ substantially for grants and cooperative agreements.

Grant Applications

Consideration for the award of a research grant will be given to fully-developed proposals submitted along with a completed Federal Assistance Application Form No. 5700-12, provided: (1) the project is research (as compared with development, demonstration, survey, or preparation of materials and documents), (2) the project is of a long-range nature (frequently more than two years), (3) the project is germane to EPA's mission (which can include being responsive to this solicitation), and (4) the grantee is eligible to apply under the various Federal laws which authorize EPA to award research grants.

Fully-developed, investigator-initiated, research proposals, prepared in accordance with instructions, should be sent to:

Grants Administration Division
U.S. Environmental Protection Agency (PM-216)
401 M Street, S.W.
Washington, D.C. 20460

Informal, incomplete, or unsigned proposals, will not be considered by the research grants program. The original plus eight copies are needed.

Investigators may use the EPA solicitation for Grant Proposals (FY 1981) to learn of Agency interests, and may receive advice from the Office of Research Grants and Centers' staff on procedural or administrative matters. This solicitation is designed to provide potential applicants with a description of EPA's grant-supported research and areas of greatest interest. It is not intended to rule out applications which are scientifically meritorious, but may not be directly responsive to it. All proposed research which is germane to EPA's mission will be given full and fair consideration.

Cooperative Agreement Applications

Pre-application Activity

Although cooperative agreement applications may be submitted at any time and on any subject, applicants should take the following actions prior to submission of a formal application in order to save time and effort both for the applicant and EPA.

1. Review ORD's current research program, as described in Part I, to determine if funds are available in the specific area of interest; and

2. Contact the appropriate research and development personnel cited to ascertain if an assistance project is planned *prior* to the submission of an official application.

Cooperative Agreements:
Contact relevant Laboratory Director as cited within each Decision Unit.

3. Submission of a preapplication for cooperative agreements is encouraged. The preapplication should be sent directly to the Grants Administration Division (PM-216), U.S. Environmental Protection Agency, Washington, D.C. 20460, for initial screening and routing to the appropriate ORD program personnel. A preapplication should normally consist of a three- or four-page narrative outlining the project concept and containing the following information:

1. **Objective**—a clear statement of the specific objective is necessary. If the objective is designed to fulfill a specific project (as identified in Step 1 above), the project should be identified. If the objective cannot be associated with any specific project, some statement of the presumed value to EPA of attaining the research objective should be made.

2. **Project Plan**—a brief description of the research/development/demonstration concept and the plan for execution of the proposed project, including a projected time-schedule for accomplishments of intermediate outputs or key occurrences indicating progress (milestones) and the final objective.

3. **Budget**—a preliminary estimate of total cost which will be incurred in order to complete the project. Also, the share of the costs which will be provided by the applicant should be indicated.

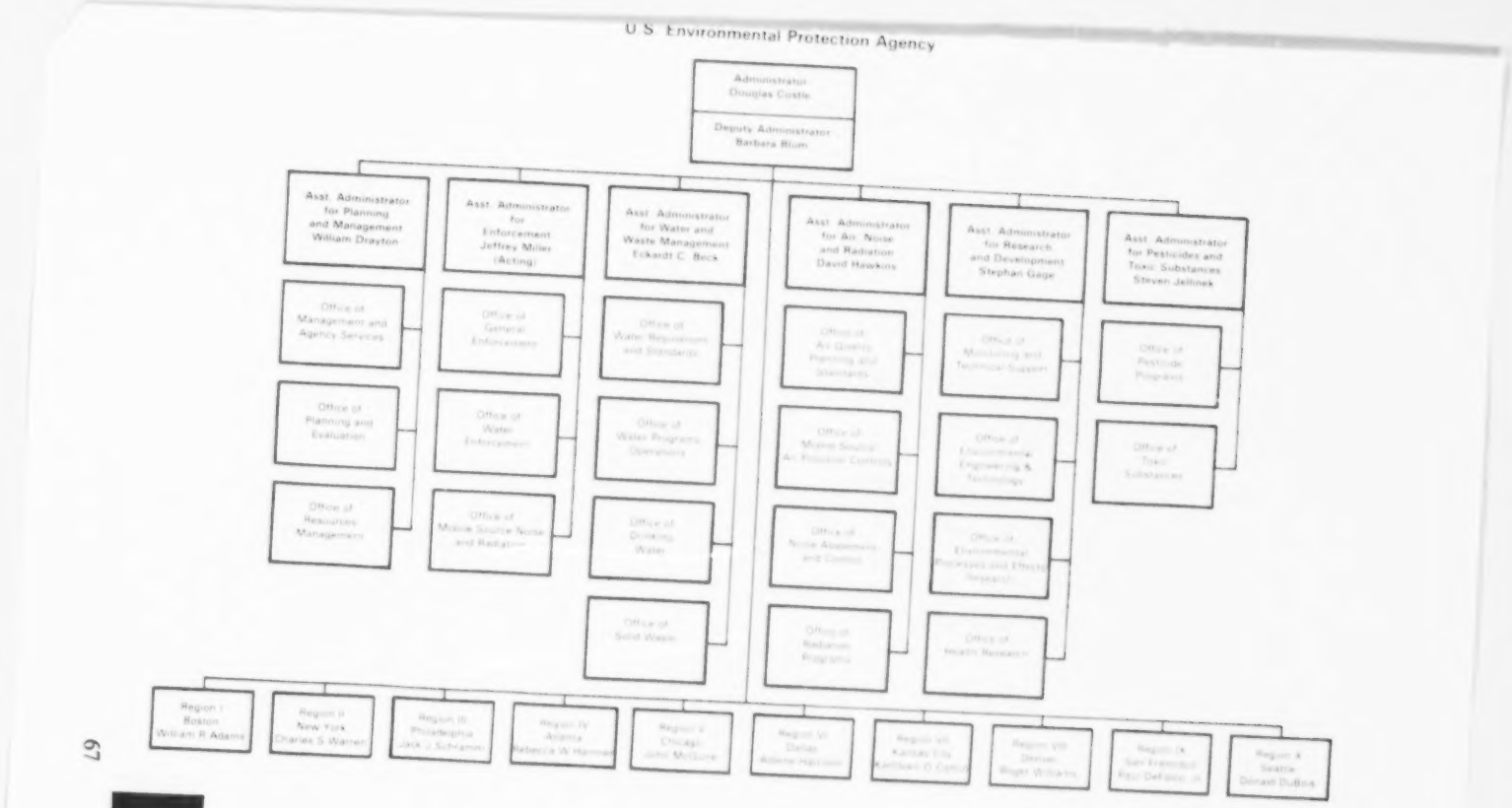
4. **Staff and Facilities**—a brief listing of key project staff and capabilities and a brief description of any special facilities or other factors which would contribute to the success of the project. A single person who will have the responsibility for planning, coordinating, and supervising the project should be identified along with the fraction of his time to be devoted to the project.

Following review and evaluation of the preapplication, the prospective applicant will be advised whether (a) an application should be submitted for formal review, (b) submission of a modified preapplication is suggested, (c) possible submission of the preapplication to another Agency, Department, or source of funds is suggested, or (d) further pursuit of the particular topic is discouraged.

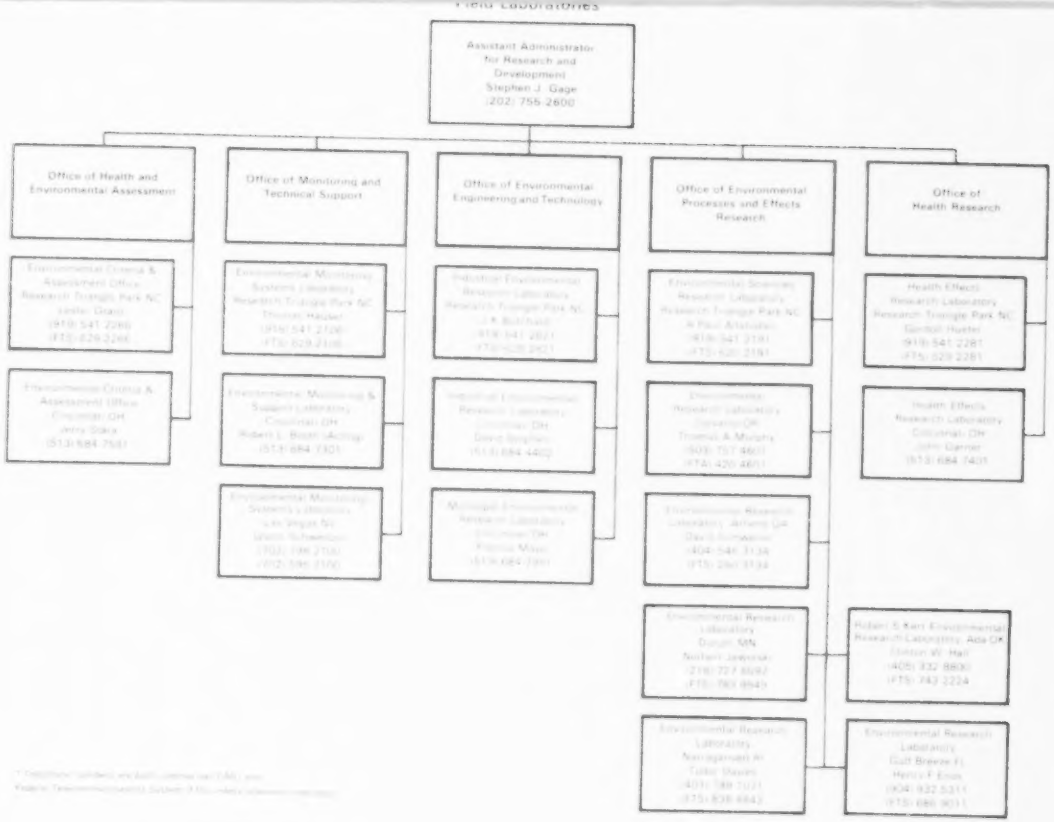
Formal Applications

All formal grant and cooperative agreement applications are to be submitted to the Grants Administration Division, Environmental Protection Agency, Washington, D.C. 20460. After formal "logging in" and acknowledgement, those applications falling within the Office of

Research and Development's purview are referred to the appropriate ORD program office for program relevance review. This review quickly screens out those applications for which EPA has no authority. For those proposals in which ORD has an interest, scientific/technical merit reviews are then conducted. Comments may also be obtained from the Regional Office in the Region where the applicant is located and where the project would be conducted to determine the relationship of the proposed project to Regional programs and policies.


U.S. Environmental Protection Agency
Administrator
Douglas Costle
Deputy Administrator
Barbara Blum
Asst. Administrator for Planning and Management William Drayton
Asst. Administrator for Enforcement Jeffrey Miller (Acting)
Asst. Administrator for Water and Waste Management Eckardt C. Beck
Asst. Administrator for Air, Noise and Radiation David Hawkins
Asst. Administrator for Research and Development Stephan Gage
Asst. Administrator for Pesticides and Toxic Substances Steven Jellinek
Office of Management and Agency Services
Office of Planning and Evaluation
Office of Resources Management
Office of General Enforcement
Office of Water Enforcement
Office of Mobile Source Noise and Radiation
Office of Water Regulations and Standards
Office of Water Programs Operations
Office of Drinking Water
Office of Solid Waste
Office of Air Quality Planning and Standards
Office of Mobile Source Air Pollution Control
Office of Noise Abatement and Control
Office of Radiation Programs
Office of Monitoring and Technical Support
Office of Environmental Engineering & Technology
Office of Environmental Processes and Effects Research
Office of Health Research
Office of Pesticide Programs
Office of Toxic Substances
Region I Boston William R. Adams
Region II New York Charles S. Warren
Region III Philadelphia Jack J. Schramm
Region IV Atlanta Rebecca W. Hanmer
Region V Chicago John McGuire
Region VI Dallas Adlene Harrison
Region VII Kansas City Kathleen O. Conlon
Region VIII Denver Roger Williams
Region IX San Francisco Paul DeFalco, Jr.
Region X Seattle Donald DuBois

US EPA Office of Research and Development
Headquarters Offices*


Field Laboratories
Assistant Administrator for Research and Development
Stephen J. Gage
(202) 755-2600
Office of Health and Environmental Assessment
Office of Monitoring and Technical Support
Office of Environmental Engineering and Technology
Office of Environmental Processes and Effects Research
Office of Health Research

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATION

The Office of Research and Development is responsible for the development, direction, and conduct of a national research, development, and demonstration program in pollution sources, fate, and health and welfare effects; waste management and utilization technology; environmental sciences; and monitoring systems. The Assistant Administrator for Research and Development also serves as principal science advisor to the Administrator and coordinator for the Agency's policies and programs concerning carcinogenesis and related problems.

	Telephone*
Assistant Administrator for Research and Development	
Stephen J. Gage Headquarters, Washington, DC (RD-672)	(202) 755-2600
Executive Assistant	
Darryl Banks	(202) 755-0122
Public Information Officer	
Elizabeth Martin	(202) 426-9454
Senior ORD Official, Cincinnati	
David G. Stephan Cincinnati, OH 45268	(513) 684-4402
Support Services Office	
Director, Robert N. Carr	(513) 684-7966
Public Awareness Officer	
(Vacant)	(513) 684-7771
Senior ORD Official, Research Triangle Park	
John K. Burchard (MD-60) Research Triangle Park, NC 27711	CML (919) 541-2821 FTS 629-2821
Support Services Office Director, Paul A. Kenline (MD-51)	CML (919) 541-2613 FTS 629-2613
Public Awareness Officer Chris L. West (MD-51)	CML (919) 541-4577 FTS 629-4577
Office of Research Program Management	
Director, Samuel Rondberg Headquarters, Washington, DC (RD-675)	(202) 755-2606

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	Telephone*
Operations Office	
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Administrative Management Staff Chief, Bernard E. McMahon	(202) 755-8787
Planning Staff Chief, Richard Curtin (Acting)	(202) 755-9722
Program Coordination Staff Chief, Jeanie Loving (Acting)	(202) 755-0620
Regional Services Staff Chief, Michael Mastracci	(202) 755-0820
Technical Information Office Director, Richard Laska (Acting)	(202) 426-9454
Technical Information Director, Calvin O. Lawrence Cincinnati, OH 45268	(513) 684-7394
Office of the Principal Science Advisor Headquarters, Washington, DC (RD-676)	
Principal Physical Science Advisor Herbert Wiser	(202) 755-0477
Principal Engineering Science Advisor Albert C. Trakowski	(202) 755-0464
Office of Exploratory Research Acting Director, Dennis A. Tirpak Headquarters, Washington, DC (RD-675)	(202) 755-0455
Management Operations Staff Chief, Raymond A. Shapek	(202) 755-0469
Office of Strategic Assessment and Special Studies Deputy Director, John Reuss (Acting)	(202) 755-2611
Economic and Operations Research Chief, Alan Carlin	(202) 755-0655
Innovative Research Program Chief, Morris Levin	(202) 755-0644
Office of Research Grants and Centers Deputy Director, Richard E. Marland	(202) 426-2355
Center Support Program Chief, Edward Schuck	(202) 426-2355

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	Telephone*
National Workforce Development Staff	
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Minority Institutions Research Support Program	
Chief, Clyde Bishop (RD-680)	(202) 426-4527
Office of Health and Environmental Assessment	
Director, Elizabeth L. Anderson	(202) 755-3968
Headquarters, Washington, DC (RD-689)	
Carcinogen Assessment Group	
Executive Director, Elizabeth L. Anderson (Acting)	
Exposure Assessment Group	
Director, Dr. James Falco	(202) 245-3039
Reproductive Effects Assessment Group	
Director, Dr. Peter Voytek	(202) 426-2275
Environmental Criteria and Assessment Office (Air)	
Director, Lester Grant (MD-52)	CML (919) 541-226
Research Triangle Park, NC 27711	FTS 629-2266
Environmental Criteria and Assessment Office (Water)	
Director, Jerry F. Stara	(513) 684-7531
Cincinnati, OH 45268	FTS 684-7531

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Office of Environmental Engineering and Technology

The Office of Environmental Engineering and Technology is responsible for the assessment and the development of methods for control of the environmental and socio-economic impacts of energy and mineral resource extraction, processing, conversion, and utilization systems; and of other industrial operations.

	Telephone*
Deputy Assistant Administrator	
Steven R. Reznek Headquarters, Washington, DC (RD-681)	(202) 755-4857
Associate Deputy Assistant Administrator	
Kurt W. Riegel	(202) 755-4857
Program Operations Staff	
Director, Richard M. Hardesty	(202) 426-2507
Energy Processes Division	
Director, Frank T. Princiotta	(202) 755-0205
Industrial and Extractive Processes Division	
Director, Carl J. Schafer	(202) 755-9014
Waste Management Division	
Director, William A. Rosenkranz	(202) 426-4567
Industrial Environmental Research Laboratory	
Director, John K. Burchard (MD-60) Deputy Director, (Vacant) Research Triangle Park, NC 27711	CML (919) 541-2821 FTS 629-2821
Industrial Environmental Research Laboratory	
Director, David G. Stephan Deputy Director, William A. Cawley Cincinnati, OH 45268	CML (513) 684-4402 FTS 684-4402
Oil and Hazardous Materials Spills Branch Edison, NJ 08817	CML (201) 321-6600 FTS 340-6600
Municipal Environmental Research Laboratory	
Director, Francis T. Mayo Deputy Director, Louis W. Lefke Cincinnati OH 45268	(513) 684-7951 FTS 684-7953

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Office of Environmental Processes and Effects Research

The Office of Environmental Processes and Effects Research is responsible for planning, managing, and evaluating a comprehensive research program to develop the scientific and technological methods and data necessary to understand, predict, and manage the entry, movement, fate of pollutants into the environment and the food chain, and the effects of pollutants upon nonhuman organisms and ecosystems.

	Telephone*
Deputy Assistant Administrator Allan Hirsch Headquarters, Washington, DC (RD-682)	(202) 426-0803
Associate Deputy Assistant Administrator (Vacant)	(202) 426-0803
Program Operations Staff Director, Patricia M. Neuschatz	(202) 426-4255
Water and Land Division Herbert Quinn	(202) 426-1532
Energy and Air Division Gary Foley	(202) 426-2415
Toxics and Pesticides Division William Murray	(202) 426-2260
Environmental Sciences Research Laboratory Director, A. Paul Altshuller (MD-59) Deputy Director, Alfred H. Ellison Research Triangle Park, NC 27711	CML (919) 549-8411 FTS 629-2191
Robert S. Kerr Environmental Research Laboratory Director, Clinton W. Hall Deputy Director, Marvin L. Wood P.O. Box 1198 Ada, OK 74820	CML (405) 332-8800 FTS 743-2224 FTS 743-2226
Environmental Research Laboratory Director, David W. Duttweiler Deputy Director, William T. Donaldson College Station Road Athens, GA 30613	CML (404) 546-3134 FTS 250-3134 CML (404) 546-3134 FTS 250-3134

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	Telephone*
Environmental Research Laboratory	
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Deputy Director, James C. McCarty	FTS 420-4601
200 SW 35th Street	
Corvallis, OR 97330	
Marine Division	
Marine Science Center	
Newport, OR 97365	CML (503) 867-4041
Environmental Research Laboratory	
Director, Norbert A. Jaworski	CML (218) 727-6692
Deputy Director, J. David Yount	FTS 783-9550
6201 Congdon Boulevard	FTS 783-9549
Duluth, MN 55804	
Newtown Fish Toxicology Station	(513) 684-8601
3411 Church Street	
Cincinnati, OH 45244	
Monticello Field Station	CML only
Box 500	(612) 295-5145
Monticello, MN 55362	
Large Lakes Research Station	CML (313) 675-5000
9311 Groh Road	FTS 226-7811
Grosse Ile, MI 48138	
Environmental Research Laboratory	CML (401) 789-1071
Director, Tudor T. Davies	FTS 838-4843
Deputy Director, Frank G. Lowman	
South Ferry Road	
Narragansett, RI 02882	
Environmental Research Laboratory	CML (904) 932-5311
Director, Henry F. Enos	FTS 686-9011
Deputy Director, Andrew J. McErlean	
Sabine Island	
Gulf Breeze, FL 32561	
Bears Bluff Field Station	
Box 368	FTS 577-4171
Johns Island, SC 29455	ask for
	CML (803) 599-0371

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Office of Health Research

The Office of Health Research is responsible for the development of health data needed for the establishment of standards and criteria or guidelines for those components of the environment in which specific pollutants or activities may require control.

	Telephone*
Deputy Assistant Administrator	
Vilma R. Hunt Headquarters, Washington, DC (RD-683)	(202) 426-2382
Associate Deputy Assistant Administrator	
Roger Cortesi	(202) 426-2382
Program Operations Staff	
Director, Roberta A. Cahill	(202) 755-9210
Health Effects Division	
Director (Vacant)	(202) 755-3968
Water and Toxics Division	
Director (Vacant)	(202) 755-3968
Air Noise and Radiation Division	
Director (Vacant)	(202) 755-3968
Health Effects Research Laboratory	
Director, F. Gordon Heuter(MD-51)	CML (919) 541-2281
Deputy Director, Robert E. Lee, Jr. Research Triangle Park, NC 27711	FTS 629-2281
Wenatchee Research Station P.O. Box 73 Wenatchee, WA 98801	CML (504) 663-0031 FTS 446-0234
Health Effects Research Laboratory	
Director, R. John Garner	(513) 684-7401
Deputy Director, James Lucas, M.D. Cincinnati, OH 45268	684-7401

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Office of Monitoring and Technical Support

The Office of Monitoring and Technical Support is responsible for the development and demonstration of monitoring systems; quality control of pollutant measurement and monitoring techniques (quality assurance); and technical support services.

	Telephone*
Deputy Assistant Administrator Courtney Riordan Headquarters, Washington, DC (RD-680)	(202) 426-2202
Associate Deputy Assistant Administrator H. Matthew Bills	(202) 426-4452
Program Operations Staff Director, Ross R. Robeson	(202) 755-6403
National Workforce Development Staff Director, J. Donald Cook	(202) 755-2937
Quality Assurance and Monitoring Systems Division Director, Charles Brunot	(202) 426-2026
Technical Support Division Director, William J. Lacy	(202) 426-2387
Environmental Monitoring Systems Laboratory Director, Thomas R. Hauser (MD-75) Deputy Director, Franz J. Burmann Research Triangle Park, NC 27711	CML (919) 541-2106 FTS 629-2106
Environmental Monitoring and Support Laboratory Director, Robert L. Booth (Acting) Deputy Director, Robert L. Booth Cincinnati, OH 45268	(513) 684-7300
Environmental Monitoring Systems Laboratory Director, Glenn E. Schweitzer Deputy Director, Richard E. Stanley P.O. Box 15027 Las Vegas, NV 89114	CML (702) 798-2100 FTS 595-2100
Vint Hill Station Director, Vernon Webb P.O. Box 1587, Building 166 Warrenton, VA 22186	CML (703) 347-6224 FTS 557-3110

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EPA REGIONAL CONTACTS

Because of the importance of planning and coordinating research and development activities with the requirements of EPA's regional needs, the Office of Research and Development established the Regional Services Staff. This staff is responsible for planning, coordinating, and reviewing a comprehensive program to provide intercommunication and assistance on all matters of mutual interest and/or responsibility of the Agency's Regional Offices and the Office of Research and Development.

	Telephone*
Regional Services Staff	
Director, Michael L. Mastracci	(202)755-0820
Staff Asst., Frances M. Duttkin	
Regional Services Staff	
Headquarters, Washington, DC (RD-674)	
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Regions II, V, and VII	
Ernest G. Karvelis	(513)684-7285
Joseph F. Roesler	
Regional Services Staff	
Environmental Protection Agency	
26 W. St. Clair Street	
Cincinnati, OH 45268	
Regions VI, VIII, IX, and X	
Shelly J. Williamson	CML (702) 595-242
Phillips A. Arberg	FTS 595-242
Regional Services Staff	CML (702) 736-242
Environmental Protection Agency	FTS 595-242
P.O. Box 15027	
Las Vegas, NV 89114	
Regions I, III, and IV	
Rudolph P. Boksleitner	CML (919) 541-26
John W. Spence	FTS 629-26
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Environmental Protection Agency	
Research Triangle Park, NC 27711	

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Region I

	Telephone*
Environmental Protection Agency Room 2203 John F. Kennedy Federal Building Boston, Massachusetts 02203	Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
Regional Administrator William R. Adams, Jr.	(617) 223-7210
Deputy Regional Administrator Leslie A. Carothers	(617) 223-5424
Public Awareness Director Paul G. Keough	(617) 223-4704
R&D Contact Richard Keppler	(617) 223-3477

Region II

Environmental Protection Agency Room 1009 26 Federal Plaza New York, New York 10007	New Jersey New York Puerto Rico Virgin Islands
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Deputy Regional Administrator Richard T. Dewling	(212) 264-0396
Public Affairs Director Frank Napal	(212) 264-2515
R&D Contact Paul W. Mason	(212) 340-6782

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Region III

Environmental Protection Agency
Curtis Building
6th & Walnut Streets
Philadelphia, Pennsylvania 19106

Delaware
District of Columbia
Maryland
Pennsylvania
West Virginia
Virginia

	Telephone*
Regional Administrator Jack J. Schramm	(215) 597-9814
Deputy Regional Administrator Alvin R. Morris	(215) 597-9812
Office of Public Awareness George Bonchanski, Chief	(215) 597-9370
R&D Contact Albert Montague	(215) 597-9856

Region IV

Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee

	Telephone*
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Deputy Regional Administrator John A. Little	CML (404) 881-4727 FTS 257-4727
Public Awareness Director Frank Redmond	CML (404) 881-3004 FTS 257-3004
R&D Contact Robert Roth	CML (404) 881-3773 FTS 257-3773

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Region V

	Telephone*
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Deputy Regional Administrator Valdas V. Adamkus	(312) 353-2000
Public Information Director Kathy Brown	(312) 353-2072
R&D Contact Clifford Risley, Jr.	(312) 353-3805

Region VI

Environmental Protection Agency 1201 Elm Street First International Building Dallas, Texas 75270	Arkansas Louisiana New Mexico Oklahoma Texas
Regional Administrator Adlene Harrison	CML (214) 767-2600 FTS 729-2600
Deputy Regional Administrator Frances E. Phillips	(214) 729-2600
Public Awareness Director Peyton Davis	(214) 729-2630
R&D Contact Mildred Smith	(214) 729-2697

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Region VII

	Telephone*
Environmental Protection Agency 1735 Baltimore Avenue Kansas City, Missouri 64108	Iowa Kansas Missouri Nebraska
Regional Administrator Kathleen Camin	CML (816) 374-5493 FTS 758-5493
Deputy Regional Administrator William W. Rice	CML (816) 374-5495 FTS 758-5495
Public Involvement Branch Rowena Michaels	CML (816) 374-5894 FTS 758-5894
R&D Contact Charles H. Hajinian	CML (816) 374-2921 FTS 758-2921

Region VIII

Environmental Protection Agency Suite 900 1860 Lincoln Street Denver, Colorado 80203	Colorado Montana North Dakota South Datoka Utah Wyoming
Regional Administrator Roger L. Williams	CML (303) 837-3895 FTS 327-3895
Deputy Regional Administrator Gene L. Lucero	CML (303) 837-3895 FTS 327-3895
Office of Public Awareness and Intergovernmental Relations Russ Fitch	CML (303) 837-5927 FTS 327-5927
R&D Contact Denis Nelson	CML (303) 837-4261 FTS 327-4261

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Region IX

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Office of External Relations Bill McNeice, Director	(415) 556-6695
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Region X

Environmental Protection Agency 1200 6th Avenue Seattle, Washington 98101	Alaska Idaho Washington Oregon
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Deputy Regional Administrator L. Edwin Coate	CML (206) 442-1220 FTS 399-1220
Public Awareness Director Donald Bliss	CML (206) 442-1203 FTS 399-1203
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